



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Moore *et al.*

Appl. No.: 09/631,638

Filed: August 2, 2000

For: **Process for the Recovery of Organic
Acids**

Confirmation No. 8662

Art Unit: 1651

Examiner: Naff, D.M

Atty Docket: 1533.0980001/SRL/KPQ

Reply Under 37 C.F.R. §1.111

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the Office Action dated May 20, 2003, Applicants submit the following
Remarks.

It is not believed that extensions of time are required beyond those that may
otherwise be provided for in documents accompanying this paper. However, if additional
extensions of time are necessary to prevent abandonment of this application, then such
extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required
therefor are hereby authorized to be charged to our Deposit Account No. 19-0036.

Remarks

Reconsideration of this Application is respectfully requested.

Claims 1, 5-7, 9-17 and 21-31 are pending in the application, with 1 and 17 being
the independent claims.

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Rejections under 35 U.S.C. § 103

The Examiner rejected claims 1, 5-7, 9-17 and 21-31 under 35 U.S.C. § 103(a) as being unpatentable over Dumpelmann *et al.* (U.S. Patent No. 5,852,211) in view of Bott *et al.* (EP 0 174 624). Applicants respectfully traverse this rejection.

The Examiner is of the opinion that it would have been obvious to omit crystallizing NaKGA in the process of Dumpelmann *et al.* and instead dry the fermentation broth and react the dried broth with the lower alcohol in the presence of acid as taught by Bott *et al.* The Examiner is also of the opinion that while the process of Bott *et al.* filters the fermentation broth before drying, it would have been obvious to omit filtering to further simplify. Applicants respectfully disagree.

Applicants submit herewith the Declaration of Kevin M. Moore. As shown in the Declaration, one of ordinary skill in the art would have no reasonable expectation of success in obtaining the desired products by drying a whole fermentation broth. Neither Dumpelmann nor Bott teach not filtering prior to drying the fermentation broth. Bott *et al.* teaches away from omitting the filtering step for reasons stated in the Declaration of Kevin M. Moore. Therefore, it would not have been obvious to omit filtering prior to drying the fermentation broth merely to simplify the process as the Examiner suggests.

If necessary, Applicants request that the Examiner evaluate evidence of secondary considerations in determining obviousness. Bott *et al.* was published in 1986, with a priority dating back to 1984. There is about a thirteen-year time period between the publication of Bott *et al.* and the priority filing of the present application in 1999. The

Examiner is of the opinion that it would have been obvious to omit filtering prior to drying the fermentation broth to further simplify. However, in the long period of time between the publication of Bott *et al.* and the first filing of the present application, there has been no evidence showing that such a simplification of the Bott *et al.* process was achieved (see Declaration of Kevin M. Moore). Thus, in accordance with the Examiner's reasoning, there has been a long-felt need to simplify the process of Bott *et al.* that was without solution. It is only in the present invention that omitting the filtering step prior to drying of the fermentation broth is achieved, thereby providing a simplified process. The long-felt need and the failure of others to satisfy that need are evidence of the nonobviousness of the present invention.

Applicants submit that the rejection of claims 1, 5-7, 9-17 and 21-31 under 35 U.S.C. § 103(a) as being unpatentable over Dumpelmann *et al.* (U.S. Patent No. 5,852,211) in view of Bott *et al.* (EP 0 174 624) has been overcome and should be withdrawn.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all currently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for

allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Katrina Y. Pei Quach
Agent for Applicants
Registration No. 51,063

Date: August 20, 2003

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Declaration of Kevin M. Moore Under 37 C.F.R. §1.132

Commissioner for Patents
Washington, D.C. 20231

Sir:

I, Kevin M. Moore, hereby declare and state as follows:

1. I am a co-inventor of the captioned application.
2. I have read and understand Dumpelmann *et al.* (U.S. Patent No. 5,852,211) and an English language translation of Bott *et al.* (European Patent No. 0 174 624).
3. The Examiner states in the Office Action of May 20, 2003,

It is granted as asserted by applicants that Bott *et al.* filter the broth before drying. However, to omit filtering merely to simplify would have been clearly obvious. No result has been established from not filtering other than to simplify, and to remove a step merely to simplify is obvious (page 4, lines 19-24).

4. Bott teaches away from not filtering, as it specifies that the calcium salt that is formed must be "water soluble". As broths contain water insoluble biomass, Bott teaches that the Bott process would not work in the presence of biomass. The Bott process gives rise to a two phase liquid system, which must be separated. The presence of biomass would create a third, solid phase. It is also possible that the solids addition could prevent the separation entirely, by forming an emulsion.
5. Dumpelmann teaches a process that involves crystallizing sodium 2-keto-L-gulonate monohydrate from the fermentation solution. Dumpelmann does not teach the drying of the fermentation broth without prior removal of insolubles from the fermentation broth.
6. Thus, one reading Dumpelmann and Bott would have no reasonable expectation of success of producing the desired organic acid by drying the fermentation broth containing biomass.
7. Further, I am not aware of any reference published prior to the first filing of the present application teaching not filtering the fermentation broth in the production of organic acids.

8. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the present patent application or any patent issued thereon.

Date: August 18, 2003

Signature: Kevin M. Moore
Kevin M. Moore